

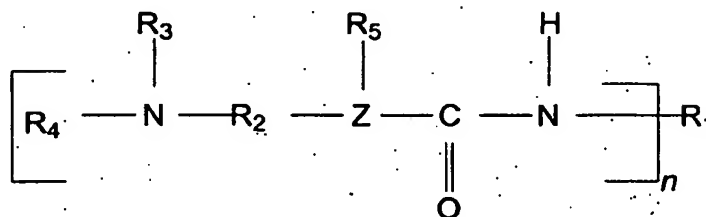
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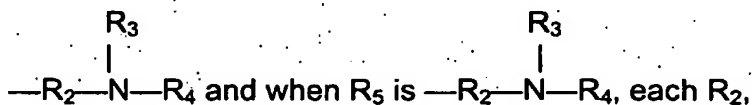
Claims from  
11/193,666

THEREFORE, WHAT IS CLAIMED IS:

1. A curable powder composition comprising:
  - (a) a material having the structure:



wherein  $R_1$  is an organic radical having 6 to 25 carbon atoms,  $R_2$  is an organic radical having 1 to 20 carbon atoms;  $R_3$  and  $R_4$  are independently alkyl or phenyl groups having 1 to 8 carbon atoms;  $Z$  is oxygen or nitrogen and when  $Z$  is oxygen,  $R_5$  is absent and when  $Z$  is nitrogen,  $R_5$  is hydrogen or



each  $R_3$  and each  $R_4$  are the same or different; and  $n$  is 1 to 4; and

- (b) a polyepoxide;

wherein the powder composition cures in the absence of any addition component.

2. The powder composition of Claim 1, wherein said composition cures at a temperature of between 80°C and 125°C.

3. The powder composition of Claim 2, wherein said composition cures at a temperature of between 105°C and 120°C.

4. The powder composition of Claim 1, wherein said composition cures at a temperature greater than 125°C.

5. The powder composition of Claim 1, wherein Z is nitrogen and R<sub>5</sub> is hydrogen.
- 5 6. The composition of Claim 5, wherein R<sub>1</sub> is 1,1,3,3-tetramethylcyclohexylene.
7. The composition of Claim 5, wherein R<sub>2</sub> is n-propylene.
- 10 8. The composition of Claim 5, wherein R<sub>3</sub> and R<sub>4</sub> are methyl.
9. The composition of Claim 1, wherein component (a) further comprises an acidic hydrogen-containing compound.
- 15 10. The composition of Claim 9, wherein the acidic hydrogen-containing compound is a phenolic compound.
11. The composition of Claim 10, wherein the phenolic compound is a polyphenol.
- 20 12. The composition of Claim 11, wherein the polyphenol is bis(4-hydroxyphenyl)-2,2-propane.
13. The composition of Claim 1, wherein (a) is present in an amount ranging from about 0.5 to 10 weight percent, and (b) is present in an amount ranging from about 20 to about 90 weight percent, with weight-percent being based upon total weight of the composition.
- 25 14. The composition of Claim 12, wherein (a) is present in an amount ranging from about 3 to 5 weight percent, and (b) is present in an amount ranging from about 3 to 5 weight percent, and (b) is present in an
- 30

amount ranging from about 30 to about 60 weight percent, with weight percent being based upon total weight of the composition.

- 5           15.    A method for coating a substrate comprising:  
              (a)    applying to said substrate the powder composition of  
              Claim 1; and  
              (b)    curing said composition.

- 10          16.    The method of Claim 15, wherein said composition is cured at a  
              temperature of between 80°C and 125°C.

17.    A substrate coated according to the method of Claim 15.

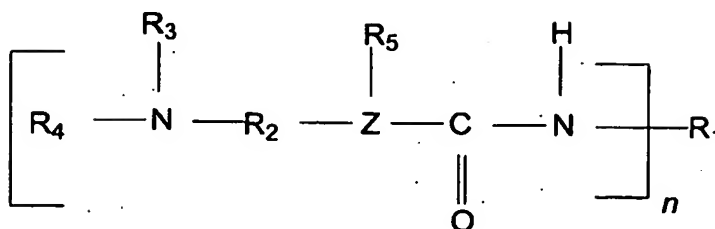
- 15          18.    The substrate of Claim 17, wherein said substrate is comprised  
              of a thermoplastic polymer, a thermoset polymer, cardboard, paper, wood,  
              particleboard, medium density fiberboard and/or metal.

- 20          19.    A powder coating composition that cures at a temperature of  
              between 80°C and 125°C, comprising a resin and curing agent therefor,  
              wherein substantially all of the curing agent is extruded with the resin.

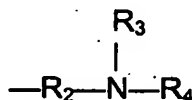
20.    The powder coating composition of Claim 19, wherein said  
              composition does not cure at a temperature below 70°C.

- 25          21.    A catalyst composition comprising:  
              the reaction product of:

i) a material having the structure



wherein  $R_1$  is an organic radical having 6 to 25 carbon atoms  $R_2$  is an organic radical having 1 to 20 carbon atoms;  $R_3$  and  $R_4$  are independently alkyl or phenyl groups having 1 to 8 carbon atoms;  $Z$  is oxygen or nitrogen and when  $Z$  is oxygen  $R_5$  is absent and when  $Z$  is nitrogen,  $R_5$  is hydrogen or

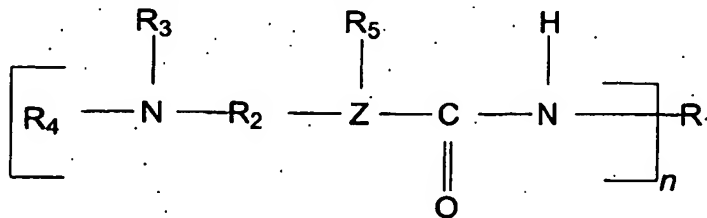


and when  $R_5$  is  $\begin{array}{c} R_3 \\ | \\ -R_2 - N - R_4 \end{array}$ , each  $R_2$ , each  $R_3$  and each  $R_4$  are the same or different, and  $n$  is 1 to 4, but when  $Z$  is nitrogen,  $R_2$  is an alkylene having between 1 and 4 carbon atoms, and  $R_3$  and  $R_4$  are both alkyl groups having between 1 and 4 carbons,  $R_5$  is not hydrogen; and

(ii) an acidic hydrogen-containing compound;

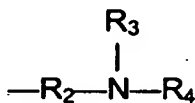
22. A powder composition comprising the catalyst of Claim 21.

23. A catalyst composition comprising:  
a material having the structure:



wherein  $R_1$  is an organic radical having 6 to 25 carbon atoms,  $R_2$  is an organic radical having 1 to 20 carbon atoms;  $R_3$  and  $R_4$  are independently alkyl or phenyl groups having 1 to 8 carbon atoms;  $Z$  is oxygen or nitrogen and when  $Z$  is oxygen  $R_5$  is absent and when  $Z$  is nitrogen  $R_5$  is hydrogen or

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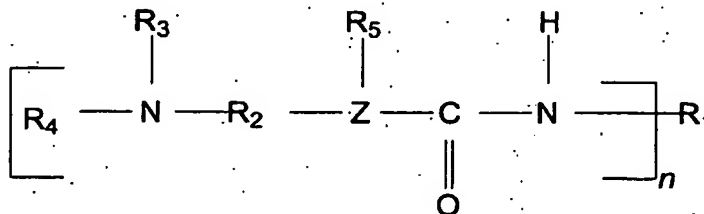


- 10 and when  $R_5$  is  $\begin{array}{c} R_3 \\ | \\ -R_2-N-R_4 \end{array}$ , each  $R_2$ , each  $R_3$  and each  $R_4$  are the same or different; and  $n$  is 1 to 4; wherein said composition does not include an acidic hydrogen-containing compound.

24. A powder composition comprising the catalyst of Claim 23,  
15 wherein said powder composition does not include an acidic hydrogen-containing compound.

25. A cured coating layer comprising:  
(a) a material having the structure:

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wherein  $R_1$  is an organic radical having 6 to 25 carbon atoms,  $R_2$  is an organic radical having 1 to 20 carbon atoms;  $R_3$  and  $R_4$  are independently alkyl or phenyl groups having 1 to 8 carbon atoms;  $Z$  is oxygen or nitrogen and when  $Z$  is oxygen,  $R_5$  is absent and when  $Z$  is nitrogen,  $R_5$  is hydrogen or



29. The composition of Claim 1, wherein  $R_3$  and  $R_4$  are alkyl.
30. A curable powder composition comprising:
- 5 (a) a polyepoxide; and
- (b) the reaction product of a polyisocyanate and either an amine comprising a primary or secondary amine group and a tertiary amine or an alcohol or polyol containing a tertiary amine.
- 10 31. The composition of Claim 30, wherein the reaction product is formed from a polyisocyanate and an amine comprising a primary or secondary amine group and a tertiary amine.
- 15 32. The composition of Claim 31, wherein the polyisocyanate is a diisocyanate.
33. The composition of Claim 30, wherein (b) is mixed with an acidic hydrogen-containing compound.
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